

Miscellany

The Office of Ordnance Research has initiated an application form for use in submitting proposals for research funds. This form is an outgrowth of material needed by OOR for the administration of its research program and needed by university business offices for their records. Interested individuals who wish to undertake projects in ordnance basic research may obtain these application forms by writing to the Office of Ordnance Research, US Army, Box CM, Duke Station, Durham, North Carolina, and requesting Form CS-51.

A prize consisting of a gold medal having an intrinsic value of 400 guilders or that amount of cash (about \$104) has been offered by the Directors of Teyler's Foundation and the Members of Teyler's Second Society (Haarlem, Netherlands) for the best essay on "the absolute relations, on time and space, between actual events, as brought to light by the theory of Einstein, and the interest which the new insights concerning these might have for views in other domains of knowledge". The closing date for submitting manuscripts is January 1, 1957. Additional details can be obtained by writing to: Messrs. Directeuren van Teylers Stichting, Fundatiehuis Damstraat 21, Haarlem, Netherlands.

Budget Message

The federal budget for the 1947 fiscal year, submitted to Congress by the President in January, includes a number of topics of significance to science, of which perhaps the most outstanding has to do with the National Science Foundation.

"Because of the direct importance of basic research to our defense program and our national welfare and economic progress," President Eisenhower said, "this budget proposes a substantial increase in federal support of general-purpose research and education in the sciences. This increase is considered by our national security and scientific research agencies to be vitally necessary. Even with this added support, basic research will constitute less than 10 percent of the government's annual investment in research and development.

"For these reasons, I recommend that the appropriation for the regular activities of the National Science Foundation be substantially increased from 16 million dollars in the current fiscal year to 41 million dollars in the fiscal year 1957. This will enable the Foundation to extend an additional 13 million dollars of support to meritorious basic research projects in colleges and universities; will provide 7 million dollars for the con-

struction of special-purpose facilities needed for basic scientific research, including the nation's first major radio astronomy center; and will make available an additional 5 million dollars for expanding the Foundation's experimental program designed to improve science teaching in our schools and colleges and to encourage a greater number of able students to enter careers in science.

"A supplemental appropriation for the Foundation of 28 million dollars will be required in the current year to complete financing of the United States program for the International Geophysical Year. The additional amount is mainly for the earth-circling satellite project, in which the Department of Defense is also participating.

"Also fundamental to science," the President added, "is the work of the National Bureau of Standards. Increased expenditures of 4 million dollars are recommended in the fiscal year 1957 to strengthen research in the physical sciences and to plan new buildings to replace present inadequate research facilities."

The bulk of the requested funds for research and development are for the Defense Department: \$1.43 billion. This compares with an estimated expenditure of \$1.37 billion during the current fiscal year.

The requested atomic energy budget for 1957 is \$1.945 billion as compared with an estimated expenditure of \$1.715 in the fiscal year 1956.

Kapitza Named JEPT Editor

According to an announcement in the November 1955 issue of the *Journal of Theoretical and Experimental Physics of the USSR*, the editorial staff of the journal has been changed. Beginning with the December issue, the editor-in-chief is Academician P. L. Kapitza, who has long been recognized as one of the leading physicists of the Soviet Union. The associate editor is E. M. Lifshitz, who is known to American physicists for his many textbook collaborations with L. D. Landau (e. g., "Classical Theory of Fields," "Statistical Physics").

The new editorial board also includes several other physicists well known to Americans. Holdovers from the previous board are E. L. Feinberg, who has done extensive work in mathematical physics, and V. P. Peshkov, the discoverer of second sound in liquid helium. New members include A. I. Alikhan'ian (cosmic rays), Academician N. N. Bogoliubov (statistical methods in physics, theory of nonlinear systems), Academician V. A. Fock (Hartree-Fock self-consistent fields), V. E. Lashkarev (electron diffraction, semiconductors), B. G. Lazarev (properties of superconductors under high pressures), and M. G. Meshcheriakov (high-energy nuclear physics). The personnel of the new board of editors suggests a vigorous effort to maintain the output of the *Journal of Experimental and Theoretical Physics* on a high scientific level.

American physicists should be aware that this journal is now being translated in entirety by the American In-

stitute of Physics (under the title, *Soviet Physics—JEPT*), with the aid of a grant from the National Science Foundation. The editor of this translation journal, Professor Robert T. Beyer, Physics Department, Brown University, has recently received a letter from Academician Kapitza in which he expressed the interest of Soviet physicists in the translation project. Academician Kapitza declared his gratification in the translation of Russian physics into English and declared himself and his colleagues to be in full sympathy and support of this project.

According to advertising announcements, the *Journal of Experimental and Theoretical Physics* will appear in 18 issues in 1956, instead of 12 issues per year as heretofore. This will actually reflect a 50% increase in the number of pages in the journal.

Experimental Reactors

Los Alamos Scientific Laboratory, popularly known for its less peaceful pursuits, is actively participating in the national nuclear reactor development program and is currently engaged in pushing to completion five promising reactor projects as part of the effort to advance the development of power reactors for eventual public use. Laboratory Director Norris E. Bradbury, in response to press inquiries, noted in January that Los Alamos has had a basic scientific interest in reactor research and development since the laboratory's inception. The 1944 Los Alamos "water boiler" was not only the first homogeneous reactor but also the first to use enriched fuel. The Los Alamos "fast reactor" (1946) was the first to use fast instead of thermal neutrons to maintain a reaction, and the first to use plutonium for fuel and liquid metal as a coolant.

The Laboratory is now working on three reactors scheduled for completion this year: a water-cooled heterogeneous type research reactor using solid fuel elements of uranium; a two-megawatt experimental power reactor of the homogeneous type with forced circulation of an enriched uranium fuel in a phosphoric acid and water solution; and a simplified, homogeneous, experimental power reactor with no moving parts, having a solution of enriched uranium as fuel, and designed for possible "package power" applications.

In addition, the laboratory is undertaking two other experimental reactor projects of which one is a "push-pull critical experiment" whereby the fuel solution is circulated (without pumps) by means of a heat exchange system that forces the solution from one reactor vessel to another and back again, thus alternately causing criticality in each vessel. The other experiment involves a reactor system using a molten plutonium alloy as fuel. High temperatures will be possible with this system, and a breeder reactor using such a fuel is potentially feasible. It is thought that the experimental reactor under study as a pilot model will develop about one megawatt of heat, and the possibility of designing a unit to operate in the 100-megawatt range is being studied.

Research Physicists

for Guided Missile Systems
Planning and
Theoretical Analysis...

*At Hughes
Research and
Development
Laboratories
unusual attention
is devoted to
creation and
preservation of a
professional
climate suited
to the
individual
needs and
interests of the
advanced
physicist,
mathematician,
and
engineer.*

It is in such an atmosphere that theoretical work of the highest order is done to establish parameters determining how well a guided missile will perform.

Physicists in this area should be able to develop special techniques for evaluating and analyzing proposed guidance systems and automatic controls. They must create special methods for conducting theoretical analysis relating to noise. The missile physicist also is concerned with exploring the field of advanced supersonic phenomena—such as performance of wing plan forms, control surface effectiveness, heat transfer at supersonic speeds, and be familiar with operations analysis methods.

Hughes

Research and
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Scientific Staff Relations

Culver City, Los Angeles County, California